

Student Admission System for Warsaw University

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Abstract

Warsaw University is the largest Polish university, the second largest higher education institution in Poland. The university comprises 18 faculties and 24 inter-departmental units, and the number of students exceeds 58 thousand. It offers courses of studies in 33 fields of arts and sciences. In the last years the number of candidates applying each year for university places exceeded 40 thousand. The candidates come from various parts of Poland, many from cities laying in a long distance from Warsaw. Until 1996 all admission activities were carried out locally by faculties. Then a central admission procedure (registration and assessment) with some computer-based support was developed by the Faculty of Mathematics, Computer Science, and Mechanics. Other faculties were encouraged to join on voluntary basis. Two years ago for the first time candidates could register remotely using a new web-based software application. This software has been used since then and improved every year. However it will soon have to undergo major revisions due to a new system of maturity examinations that is to be introduced starting from 2005, which will serve as a basis for the admission procedures used by higher education institutions in Poland.

The purpose of this paper is to present the organizational and technical aspects of the computer based systems for students admission used in Warsaw University over the last decade and in particular describe requirements for the new system to be deployed in 2005, which may become a national standard in Poland.

Keywords: student admission system; registration and assessment, University Study-Oriented System (USOS); consortium of Polish higher education institutions

1 Introduction

The purpose of this paper is to present the organizational and technical aspects of the computer based systems for students admission used in Warsaw University over the last decade. Warsaw University is the second largest higher education institution in Poland. Until 1996 all admission activities (registration and examination) were carried out locally by faculties. In 1996 the first central exams were offered for the most popular exam subjects. In 1997 for the first time candidates were registered centrally. The central admission procedure and a necessary computer-based support were developed by the Faculty of Mathematics, Computer Science, and Mechanics. Since 2002 a new web-based computer application is used. It will have to be updated substantially before 2005 admission due to the

on-going re-orientation of the education system in Poland.

The higher education system in Poland is outlined in section 2. In sections 3–6 the restructuring of the admission strategy applied in Warsaw University during the last decade and of the underlying software support is described in some detail. In section 7 requirements for the new software system are discussed. Some conclusions are drawn in the last section.

2 Admission to higher education institutions in Poland

Polish education has been undergoing major restructuring since the early 1990s [8]. The introduction of a market economy has affected the country's system of higher education in particular. Job competitiveness and the threat of unemployment have increased the demand for university places, as enrollment in higher education is generally regarded as the best way to ensure success in professional life. To address the needs of the new economy, changes have been made to the curriculum and to the assessment procedures.

The credential that gives right for entry to higher education, before and after reform, is the **maturity certificate**, issued after completion of education in a secondary school and success in the **maturity examination**. The maturity examination is not compulsory in Poland, although it is necessary for all these pupils who wish to apply for admission to any type of higher education institution.

The rules of admission to the first year of study are determined autonomously by each institution. Presently some organize competitive entrance examinations, others use ranking procedures based on the final grades listed in the maturity certificate, still others admit all applicants.

In 2001 the Minister of National Education and Sports made a decision to introduce, starting from 2005, a new system of maturity examinations. This new system relies on external grading of written exams, based on clearly-defined criteria and must by law be used as a basis for the admission procedure by higher education institutions. These institutions had been obliged to present to the public by June 2004 the basic principles of their admission procedures that will be used in 2005. In particular, they must have decided how to split the admission limits between various groups of candidates (those who graduated and will graduate from secondary schools under the "old system" and those who will graduate under the "new system").

The issue gets a lot of publicity in media because it draws a lot of interest, especially from prospective students. The ad-

mission process have an essential financial aspect: at public schools there is a limit on the number of candidates that are admitted for free studies; those who want to study and are not admitted within this limit must pay for their education.

The reformed secondary school and the development of the new national maturity examination is aimed at abolishing the current entrance examination. This will be a major change comparing to the existing rules where the majority of higher education institutions organize their own entrance examinations. However, it is necessary to distinguish between two things: the assessment of the preparation of candidates in school disciplines, which are in line with the specialization they would like to undertake, and the assessment of candidates' predispositions required for a given branch of study. Until now higher education institutions organized entrance examinations in such a way that they assessed candidates' knowledge and skills in school disciplines (first type of assessment). In exceptional cases (artistic academies, sports academies, architecture) both types of assessment were carried out. The new maturity examination, being an official confirmation of candidates' knowledge and skills in particular school disciplines, will make it possible to abolish entrance examinations of the first type. However, higher education institutions will be free to carry out examinations of the second type.

More about higher education in Poland can be found at [8, 1, 2].

3 Central admission for study programs at Warsaw University — years 1997–2001

Warsaw University is the largest Polish university, the second largest higher education institution in Poland (the first is Warsaw Polytechnic). The university comprises 18 faculties and 24 inter-departmental units, and the number of students exceeds 58 thousand. It offers courses of studies in 33 fields of arts and sciences. Since the early 1990s, due to the major restructuring of the system of higher education, the number of candidates was continuously growing. In the last years it exceeded 40 thousand (45 thousand in the record year 2002), despite the serious competition from the private education sector. Also the background of the candidates changed, many of them work on a part-time or even full-time basis. These trends created the need for changes in the assessment procedures.

Until 1996 all admission activities (registration and assessment) were carried out locally by faculties.

Candidates were asked to deliver all necessary documentation personally to student offices at the faculties. In rare cases documents were accepted by post, but candidates were strongly discouraged to use this method.

This procedure was based on the assumption that one candidate applies for only one study program. This, however, was not the case. Starting from 1991, delivery of the main document entitling a candidate to higher education (a maturity certificate) was postponed until the end of the admission procedure. Many candidates took advantage of this regulation and applied simul-

taneously for a few study branches to increase their chances for getting a place. However, in such cases the candidate had to visit all involved faculties and pass all expected exams. Sometimes this would mean that he/she had to take an examination in the same subject more than once, for example the entrance exam in Polish language was required from candidates for 10 various study branches. Other popular exam subjects were math and foreign languages. Record holders were examined on the same subject even up to 4 times. Even worse — it might also be impossible for a candidate to apply for some study programs if exams accidentally were carried out on the same day. Such assessment procedures were painful for many candidates, especially those coming from areas laying in a large distance from Warsaw. It was also costly for the university.

This old system had been criticized since 1991 by the authorities of the Faculty of Mathematics, Computer Science, and Mechanics. In 1992 the faculty for the first time carried out common admission for its two disciplines: mathematics and computer science. The new system was very well accepted by applicants and the faculty staff. In the end of the year the first proposal of one common admission procedure was presented to the rector and senate of Warsaw University. Since then the subject had been vividly discussed every year during the senate meetings.

In 1996 the first central exams were offered for the most popular exam subjects: mathematics, Polish language, and foreign languages.

In 1997 for the first time candidates were registered centrally. The central admission procedure and a necessary computer-based support were developed by the Faculty of Mathematics, Computer Science, and Mechanics. The person responsible for the whole process was the former faculty's deputy dean for students affairs.

First the important decision was made that during the registration a candidate had to deliver only basic personal data, point out selected study programs and pay the registration fee. Delivery of all other necessary documents was postponed until the end of the admission procedure. All the needed information fitted on a one page form which could be scanned and transformed to the data file which could be further processed electronically. Delivery of this information took much less time than the original procedure in which all necessary documents were submitted.

In the first year (1997) all forms filled by candidates were gathered during the registration, scanned off-line, processed by a simple Excel application which finally printed notifications for the candidates with details about the exams (dates and places). These notifications were then sent to the candidates by post (see fig. 1).

However, it was quickly recognized that the whole process may be organized more efficiently. The next year (1998) scanners and computers were installed at the central registration office. The old application was replaced by the new one, written in Access.

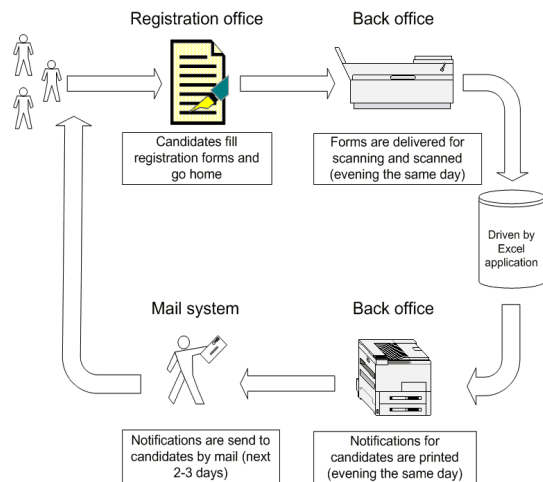


Figure 1: Student admission system in 1997

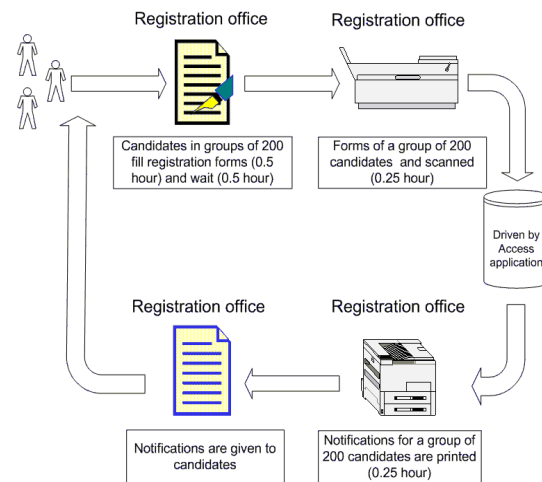


Figure 2: Student admission system from 1998 to 2001

While the new group of 200 candidates was filling the forms (it took about half an hour), the previous group waited, watching movies about the university or asking questions. In the meantime forms of this group were scanned locally and processed by the Access application which distributed the candidates among exam rooms according to their study preferences. Notifications were printed and delivered to the candidates (it also took about half an hour). In case of any malformed or unreadable data the candidate was immediately asked to correct it. The candidates left the registration point with all the necessary information in hands and the university didn't have to spend money for mailing letters (see fig. 2).

The whole process from the technical side was supported by two IT specialists and two ordinary PCs — one working with the scanner, the other with the database and the printer.

Other faculties were encouraged to join the central registration on voluntary basis. More and more did every year. In June 2001 more than 20 thousand candidates registered that way for 24 study programs in less than two weeks and the numbers were expected to grow even further. The system functioned without major problems for a couple of years, effectively handling the growing number of prospective students and faculties.

4 Prototype web-based student admission system — June 2002

From early 2000s with the growing number of private higher education institutions the problem of attracting more and better prospective students was becoming more and more challenging, and for smaller institutions was a matter of survival on a free market of higher education. A competitiveness of the private sector on the one hand and the growing demand for university places on the other were the problems to cope with. The potential of reaching the limits of the existing system was also an issue, as was the financial aspect of the admission process. Registration fees paid by candidates were a source of substantial income.

The important question was HOW to attract and handle effectively the best prospects. One of the solutions was to make the registration procedure possibly applicant-friendly and simultaneously build an image of Warsaw University as a modern education institution promoting modern technologies.

In December 2001 the authorities of the Faculty of Mathematics, Computer Science, and Mechanics started the project for developing a web-based computer application for the student admission and adopting accordingly the registration procedure. The most innovative aspect of the new application was that it enabled the remote registration. For the first time a candidate could handle all registration activities on-line and come to Warsaw on a very last moment — to take part in entrance exams. It was expected that for candidates living far away from Warsaw, these with smaller financial resources, those spending May-June (registration months) abroad or having full-time or part-time jobs, that would make a significant difference.

Some general ideas of the new solution were outlined in [5].

The project had been undertaken by a group of academic teachers and students of the faculty. The know-how on the registration process obtained during the previous years helped them to gather main system requirements within 1–2 months.

One of the important organizational problems of the new procedure was how to remotely get the confirmation from the applicant that the registration fee had been paid. It might seem to be an easy task in countries with developed banking systems however it was not in Poland where the payment with credit cards for on-line purchases through the Internet is not yet popular.

The university signed an agreement with one of the Polish banks (a member of an international group) offering a service called **SpeedCollect**. Each candidate was assigned a unique number. This number was used as an extension to the account number of the university. Candidates transferred registration fees to these accounts. Every day information about receivables was delivered electronically by the bank to the university

in a form of a structured file. This file was imported into the admission application, interpreted on-the-fly and all the candidates' due payments were automatically reconciled with the receivables which were easily matched with the candidates by the account numbers.

Of course the bank charged a small fee for every transaction thus decreasing the university income, however the organizational benefits were tremendous. The university had the money credited to the account promptly, knew immediately who had paid and could continue further processing of the candidate's registration, i.e. to book seats in exam rooms. This aspect was crucial since to avoid overbooking no seats were allocated in advance.

Thus the expected procedure was the following: a candidate registered on-line, got from the system the detailed information about money due and the account number (might even print properly filled money transfer form with a bar code), transferred money to the given account number, waited day or two until the transfer was confirmed by the bank, logged in again to check (or print) information about the exams — dates and places (see fig. 3).

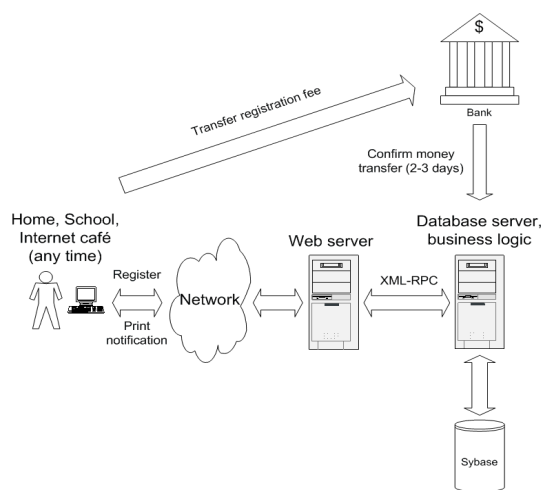


Figure 3: Student admission system from 2002

The other problem the system had to cope with were intentional *denial-of-service* attacks.

Generation of unique identifiers was also an issue. It seemed reasonable to use person numbers of the candidates however they couldn't be verified remotely so if the entered number was unique it was regarded as delivered by the owner. If, however, the same number was then submitted by another candidate, it could not be accepted but the candidate still could register under some artificially generated "person number". The same procedure of generating the artificial numbers was run for the candidates who were not Polish citizens.

The guide of study programs of all Warsaw University faculties was available on-line, easily browsable. All the necessary data were delivered in XML files. The built-in search engine enabled easy search for the information.

The system supported three different interfaces: for a candidate, for a member of an admission commission, and for an administrator. The member of the admission commission had many privileges, for example could decide that the applicant is exempted from the entrance examination (free entrance was granted to the winners of various subject competitions) or could manually select an examination room for the applicant (disable candidates might need special arrangements).

It was obvious from the beginning that the new application can not entirely replace the old method of the registration since some candidates may prefer the traditional routine or may not have an easy access to Internet. It was also easier to base both applications on the same data repository since the system had to recognize uniquely each candidate and assign him the exam places retrieved from the common pool. This means that the same database was accessed simultaneously by the interactive users and by the operator delivering batch workload consisting of the data obtained from of the scanned forms. So the overall routine comprised the system from fig. 3 and the one from fig. 2 in which Access application was replaced by the batch interface to the business logic of the web application.

From the technical perspective the system was a multi-tier product using freeware Sybase Adaptive Server Enterprise 12.3 as the data repository, PHP and HTML for the user interface, Java for the business logic, XML-RPC and JDBC for the middleware, bash and Perl for the auxiliary processing at the front-end, Python for the automatic testing.

Two Intel-based servers running Linux were set up for the system: one (2 x PentiumIII 1GHz, 512MB RAM, SCSI controller, 3 SCSI 36GB disks without RAID) as the web server and the other (2 x PentiumIII 1GHz, 2GB RAM, matrix controller Adaptec SmartRAID, 4 SCSI 36GB disks with RAID 5) for the system business logic and the database server.

The prototype version of the new system was ready in the end of May. The registration started in the beginning of June so there was almost no time for the thoroughful testing. The authorities made a risky decision and accepted the system as the backup registration method. The URL of the new service was posted on the university web pages but it was not advertised in any more active way.

The recognized drawbacks of this prototype version were the following:

1. The used freeware version of the Sybase database implements very raw locking strategy — large parts of database objects are locked on each access. This substantially limited the system throughput. When the new batch files were processed (every half an hour), the system reactiveness dropped off substantially. Tuning of SQL queries helped only a little.
2. The administration interface was not flexible and some operations were unreasonably difficult to carry out, like increasing the pool of exam seats.

3. The set of delivered reports was insufficient.
4. The built-in history mechanism allowed for the thorough tracing of many actions back in time but at the expense of the lower system performance.

The popularity of the e-mail help-desk was tremendous. The candidates could get help almost around the clock and they used this opportunity heavily. It helped to get around some organizational problems. For example quite many of interactive users couldn't handle correctly even the potentially easy tasks, like filling the on-line registration form (e.g. surprisingly often they put given name in the field for a family name and vice versa) or remembering the password for a couple of days. It happened quite often that when they could not login to the old account, they created a new one. This worked, but only if the money transfer was identified with the unique identifier attached to the new account, not the old unavailable one.

Some candidates postponed the money transfer till the very last days of the registration and sent money through the slow Sybir banking system instead of the more prompt Elixir system. The transfers could not be confirmed by the bank on time (the time period between the last day of the registration and the first examination day was very short). The last resort solution was to accept — in these exceptional cases — faxes with the money transfer receipt.

Despite these difficulties about 23% of the registrations were handled using the new system. Many candidates, especially these from distance places, warmly accepted the possibility of the remote registration, which saved their time and money.

The added value was that the data of the new students could be obtained from the admission system database and transferred to the University Study-Oriented System (USOS, see [4, 5, 6, 7]) — student management information system used in Warsaw University for handling student affairs and study programs. This was done half-manually: the data was first selected from the admission system database and stored in a text file, then it was processed by some script to transform them into properly structured SQL statements. These statements were run on the USOS Oracle database.

The admission software was designed to have a separate database but its structure was consistent with the USOS database therefore it was easy to transfer records of the accepted prospects from one repository to the other.

5 Improved web-based student admission system — June 2003

The prototype version of the student admission system used in 2002 was improved before June 2003. Also the organizational aspects of the admission procedure were updated.

The main changes concerned the database part. Due to the agreement with Sybase Poland, the University of Warsaw got a free licence for a two-processor server for the commercial Sybase Adaptive Server Enterprise 12.5.0.3. This version

didn't have the locking problems of the freeware version. Also many SQL queries were further tuned, what substantially improved performance of the application (the time to process the batch of 200 scanned forms dropped down from approximately 20 minutes to 2-5 minutes).

Some changes were made in the administration interface, new reports were added. The on-line read-only catalog of study programs was made available to the candidates on March 1st, 2003. On May 1st, 2003 the registration system was switched on and it was running in read-write mode until June 11th (after 11th only in read mode). Therefore the candidates had much more time for finding the necessary information about the university offer and for the registration. However, only a small percentage used the possibility of the early registration, the vast majority registered during the last couple of days.

Due to the longer time period between the last day of the registration and the first exam there was enough time even for the late birds to get the confirmation of the money transfer.

Some statistics of the 2003 admission can be observed in figures 4 (summary by month), 5 (daily statistics for June) and 6 (hourly statistics for June). These diagrams were obtained by the Webalizer from system log files. The Webalizer is a fast, free web server log file analysis program. It produces highly detailed, easily configurable usage reports in HTML format, for viewing with a standard web browser. A **hit** is any file that is requested from the site server. This file can be a HTML page, a GIF graphic, a flash animation etc. The **file** count tells how many files were actually sent to a user's browser. Files represent the total number of hits that actually resulted in something being sent back to the user. **Pages** are actual HTML files that are viewed. **Visits** correspond to the number of times someone visits the entire site. **KBytes** is a measurement, in kilobytes of the traffic the site is attracting.

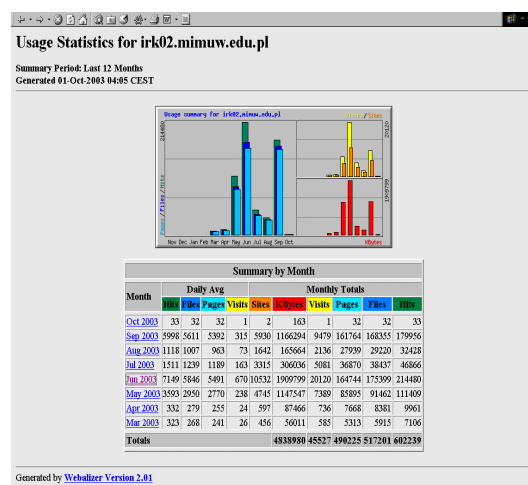


Figure 4: Usage statistics for the student admission system in 2003 (summary by month)

The system was used from March until October (in Poland the new academic year starts on October 1st). The heaviest traffic was observed in June during the very last days of the registra-

tion. On the hourly diagram for June it can be seen that the system was accessed almost around the clock, since even deep night hours show some user activity.

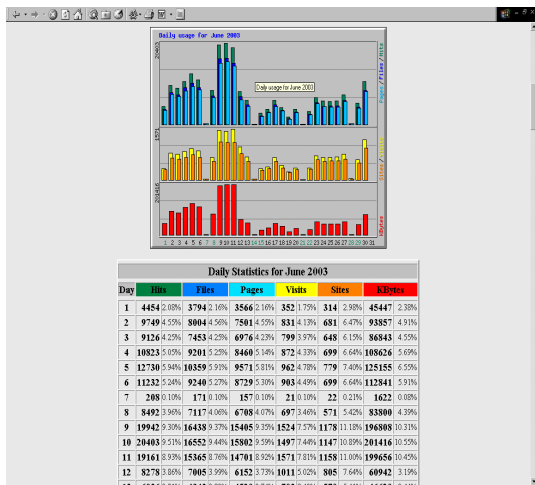


Figure 5: Usage statistics for the student admission system in 2003 (daily statistics for June)

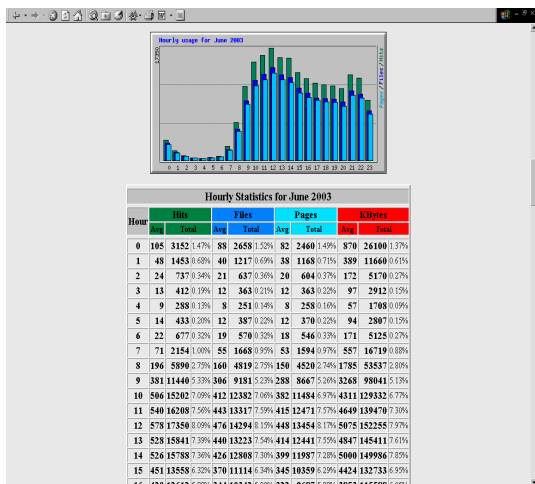


Figure 6: Usage statistics for the student admission system in 2003 (hourly statistics for June)

The success of the on-line registration system was significant. This year it carried out more than 40% of all registrations. The total number of admissions dropped slightly (due to the lower population of the prospective candidates), but still there were approximately 40 thousand candidates applying for more than 10 thousand places in 26 study programs. This success got a lot of publicity in media. Journalists underlined the innovative aspect of the enterprise, the only one of such kind and scale in Poland.

As the result many higher education institutions in Poland showed interest in the new software and online admission.

6 Functionally extended student admission system — June 2004

This year major revision of the system has been undertaken. The changes regard many aspects of the system and some of them are still underway (in the end of April 2004).

In the old system all the input data for the system (about faculties, study programs, exams, exam rooms and their capacity etc.) was prepared in XML files. These files were edited manually. What was extremely error-prone was that some information had to be delivered in more than one file. Also it was almost impossible to share the task of preparing these files — only one person at a time could edit them. This was very cumbersome since in fact the information was delivered from faculties. Much more natural would be to enter and correct the information at places from which it originated.

We designed and developed an auxiliary web application which could be used by faculties in a distributed way. It consisted of a set of WWW forms for entering data. Each faculty could independently deliver all the necessary data (according to the predefined format enforced by WWW forms). One appointed person could also independently check for any omissions or inconsistencies. The data could be easily edited, previewed as HTML pages, printed, read, and corrected. Each particular data was input only once. The data was gathered in an open-source (free) PostgreSQL database. The operator could with one click generate automatically all XML files needed to fill the admission system database. The same data was used to print various paper study guides of Warsaw University study programs.

The new web application is shown in fig. 7 — it consists of elements comprised inside the rectangle. Compare fig. 7 with fig. 3 to see the connection between the new application and the admission system

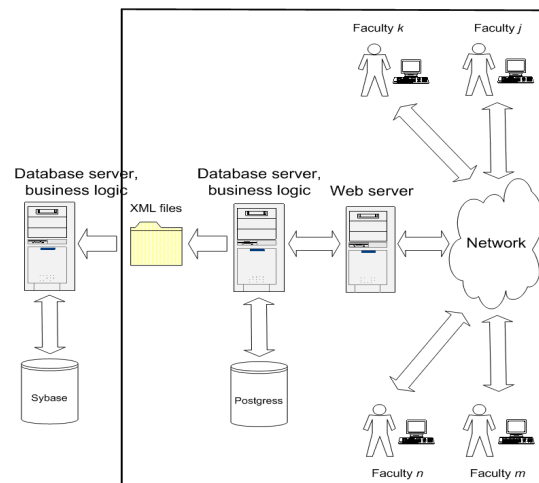


Figure 7: Auxiliary web application for delivering data to student admission system (from 2004)

The other revision concerned handling of user accounts. In the old system the candidate could create more than one account and these accounts were not identified by his/her personal num-

ber. It was a source of many mistakes, so we decided to change this part of the system. A candidate is asked for his personal id number in the very beginning of the registration procedure and the account is identified by this number. It means that one user can create only one account. We also decided that for the benefit of the candidate a quick contact should be possible. The system asks for e-mail address, phone number and mobile phone number — one of these **MUST** be defined. In case of any conflict (the other user tries to create an account and the given personal number is not unique) the candidate is required to prove his identity by sending copy of the personal identity card — by mail, fax or e-mail (as graphic file). Quick contact with the original owner of the personal number is made to clear out the misunderstanding. We expect that this option will be rarely used (if ever). The candidates are definitely highly motivated to deliver correct personal data, especially under penalty of not being enrolled at the university.

Of course non-Polish citizens who do not possess personal numbers have to be handled in a special way, as before.

Quick contact is also needed for handling forgotten passwords.

The admission system database was upgraded to Sybase Adaptive Server Enterprise 12.5.1.

The module for handling registration fees was adapted to the new standard of account numbers — IBAN (International Bank Account Number) which will be the only one accepted starting from July 1st, 2004.

Other functional extensions concern a part of the system for the members of the admission commission. They should be alerted automatically via email about various vital events, like reaching the capacity limits of the exam rooms or money overpaid.

Further integration of the admission system with USOS has also been designed and developed. Both systems use the same data dictionaries (study programs, specializations, secondary schools, area codes etc.) This helps to exchange more data. In particular we designed a new procedure for passing data of accepted candidates from the admission system to USOS. The candidate is asked to input just a basic information about himself to take part in the entrance examinations. However the accepted candidate need to deliver more data. This year the interface was extended in such a way that it accepts all the data necessary to enroll the candidate as a student. When a candidate passes positively the assessment procedure he is asked to supply the missing data and approve it as correct and complete. Only after that the candidate can print an enrollment form which should be delivered together with the maturity certificate to the faculty's student office. Also only after that the administration officer from the faculty can import the student's data on-line from the admission system straight to USOS (possibly checking their correctness on-the-fly). The enrollment procedure involving the admission system and USOS is demonstrated in fig. 8.

For the first time all the data concerning a new student will be entered personally by the student and transferred to the univer-

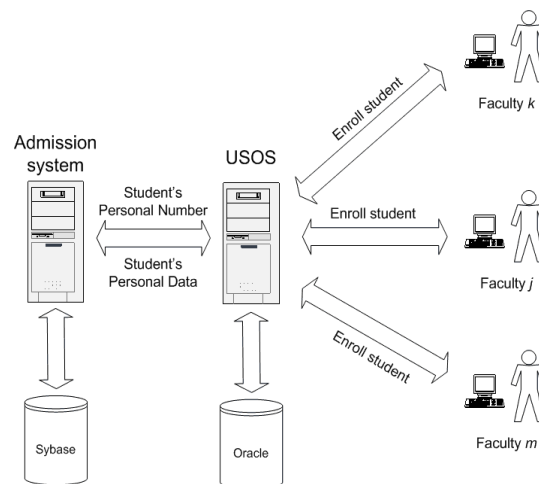


Figure 8: Student enrollment in USOS with data obtained on-line from the admission system (from 2004)

sity database entirely automatically.

The most possible scenario for the future is that the system will be offered to the universities gathered in the consortium of Polish higher education institutions, established in 2002 with the purpose to design and develop common computer based information systems; see [6].

7 New student admission system for 2005

The new admission system will have to take into account the on-going re-orientation of the education system and move away from the current sole reliance on the entrance exams, to basing the decision on the results of the new maturity examinations. This will change substantially not only the assessment criteria but also the registration procedures.

Admissions during the transition period will be especially difficult, with two groups of candidates (those who graduated and will graduate from secondary schools under the "old system" and those who will graduate under the "new system") being handled according to different criteria.

The new software should support not only the registration itself but also, what is more difficult, the assessment process. This means that all possible assessment criteria should be taken into account. First the school grades which are in line with the specialisation a candidate would like to undertake should be delivered, then results of the maturity examinations, and finally results of the assessment of the candidates' predispositions required for a given branch of study. Faculties have freedom in setting the rules for this second type of assessment, what of course complicates the system requirements. Special algorithms will have to be implemented supporting the system in making the automatic decisions according to the candidates' selected programs, qualification rules, secondary-school grades, maturity achievements, predisposition exams etc. This process will definitely be many-stage since candidates will

more probably apply for a couple of study programs.

Many faculties postpone the detailed decisions on the new rules, what makes requirements analysis for the new software even more difficult.

The requirements analysis process is already underway. The University Admission Committee has been established with the aim to coordinate all activities involved in the admission procedures and prepare recommendations for the software team. The requirements are also gathered from other universities collaborating within the consortium of Polish higher education institutions.

Since in the new system assessment will be based on the results of the maturity examinations, these results should be delivered to the system. It is however crucial that the data is obtained from the thoroughly authorized source. Of course the best procedure from the candidate point of view would be to deliver everything what is needed remotely and electronically. The convenient system of remote registration would be ruined if candidates would have to deliver hard copies of maturity examinations at the early stage of the assessment procedure.

We found another way. Maturity examinations are coordinated and controlled by special commissions appointed by the Ministry of National Education and Sports. In Poland there are 8 regional commissions and one central which coordinates the tasks of the regional ones. These commissions will use the same computer-based application (currently under construction) for handling maturity examination results. Thus it will be possible to obtain the reliable data either from the database of the central commission or from the appropriate regional commission. The final procedure is now being worked out. However the general idea is clear: a candidate will authorize the university admission system to ask in his behalf for the results of the maturity examinations at the appropriate examination commission. The needed data will be delivered on-line from the most credible source possible. The candidate will have the chance to verify what was imported and is used by the assessment procedure. Later on the detailed results of the entrance examinations and the classification decisions will be transferred to USOS together with other data.

The whole procedure is demonstrated in fig. 9.

The admission system might also be extended to play a role of the all-year-round available information center, delivering all possible data and statistics of the university offer.

The role of the information part of the system will be substantially extended. The existing version is limited in many respects. Only the basic information on study programs, exams and admission procedures is available. Other data can be found on faculties' web pages, however they are not always easily available, data is delivered in various formats and therefore it is not easy to compare. The good information service should provide such data in a unified form, at one easy to remember URL, with all necessary attachments at the finger tips. For example the same study branches offered by various faculties should

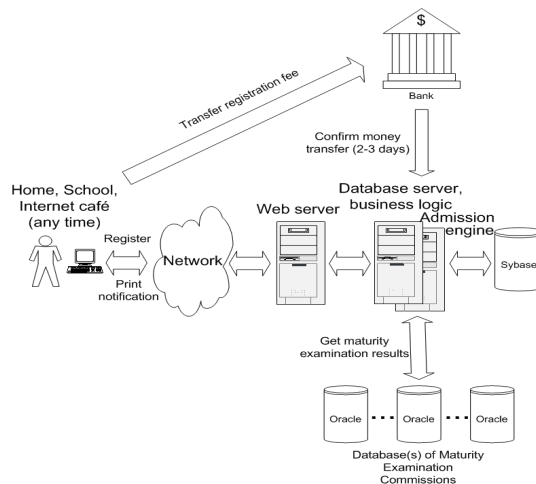


Figure 9: New student admission system for 2005

be easily comparable. Candidates want an access to the detailed description of the assessment procedures, test exams to view, print or carry out on-line. They are interested in the official accreditation of the university disciplines, offered diplomas, computer infrastructure, capabilities for disabled persons, maps showing university campuses etc. They would probably like the idea of getting a personalized portlet on the university server and the promise to be alerted by email about all events of interest. They might want to join discussion groups with current students playing roles of advisors. The possibilities are unlimited. The goal however is clear — to attract prospective students and help them to make an important lifetime decision.

All kinds of statistical data should also be available from such information server and will be an excellent basis for the university strategic planning for the future.

The important aspect of these plans is that according to the official announcements of the Ministry of National Education and Sports until the end of 2004 all secondary schools in Poland will get access to Internet. This together with an easy access to the authorized information service will help in balancing chances of young people coming from various environments and parts of Poland.

The plans are to first use the new software for the Warsaw University admission, and next for the admission to all Warsaw higher education institutions (the largest Polish university, technical school, economic school and some others). In the future the system might become the basis for the common unified admission system for all higher education institutions in Poland.

8 Summary

The common national student admission system for all Polish higher education institutions is a vision we would like to realize. However it is probably much easier to develop appropriate software than to convince authorities from these institutions

that achievement of such goal is the common national interest, solve all organizational problems, involve in the process secondary schools and government educational agencies etc. The first steps have already been made.

The Warsaw University student admission system is available on-line at the address [3].

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